

No change has been made in the system of working the forests, and there is nothing fresh of any interest to note under this head.

19. The work of cutting the forest up into compartments was continued and good progress made. The operation is approaching completion, but remains to be carried out in the newly acquired reserves, and in some of the old forests of the Jerruck Division.

20. The boundaries of all the reserves notified up to date have been laid down by cleared sides and boundary mounds as far as time and funds permitted.

CHAPTER III.

PROTECTION AND IMPROVEMENT. SECTION 1.—ESTABLISHMENTS.

21. Mr. G. M. Ryan, Assistant Conservator of Forests, was in charge of the Sukkur Division from the beginning of the year till 2nd May, when he was relieved by Mr. A. Stewart, Deputy Conservator of Forests. Mr. Ryan's health had suffered from the effects of the climate in Sukkur during the previous hot weather, and a change to Lower Sind was considered advisable. Mr. Stewart remained in charge of the Sukkur Division during the rest of the year. Mr. Tuljaram, Sub-Assistant Conservator of Forests, served in the Sukkur Division throughout the year.

22. The Naushahro Division was under the charge of Mr. Neribdas Jethmal, Sub-Assistant Conservator of Forests, throughout the year.

23. The Hyderabad Division was in the charge of Mr. Showkiram Peribdas, Sub-Assistant Conservator of Forests, from the 9th April to the end of the year. Mr. Hexton, who had held charge of this Division up to the date given above, was transferred by the orders of Government to the Presidency proper. Mr. Hexton, who served in Sind during the greater part of his service, had a thorough knowledge of the Sind forests and the people in and around them, and with whom he had great personal influence. I was very sorry to lose his services.

24. The Jerruck Division was in charge of Mr. Stewart, Deputy Conservator of Forests, up to May, when Mr. Ryan assumed charge on transfer from Sukkur.

SECTION 2.—GENERAL PROTECTION AND BREACHES OF FOREST LAW.

25. The general protection of the forests was good and the conduct of the Protective Establishment on the whole satisfactory, though I regret to have to report some cases of misconduct. Forester Khanchand, Sukkur Division, was reduced from 2nd to 3rd Grade for carelessness and suspected connivance at an attempted fraud. Forester Anandrai, of the same Division, was found in possession of a quantity of rafters he had removed for his own use from the forests under his charge, but for which he produced a receipt said to have been given by one Sidik, from whom the rafters were said to have been purchased. But on enquiry Sidik repudiated the transaction, and the receipt was found to be a forgery. During the departmental enquiry by the Divisional Forest Officer, Forester Anandrai behaved with great insolence, and accused the Divisional Forest Officer to me of having struck him and foully abused him.

As the accusations made by Anandrai were found to be entirely false, and there did not appear to be a shadow of doubt as to his guilt in respect of the rafters, I dismissed him and ordered him to be prosecuted.

A complaint was lodged against him on 14th December 1888 before the City Magistrate, Shikarpur, but owing to frequent postponements granted in the hearing of the case, it was still pending when the year under report came to a close.

26. A comparative table showing the cases tried before Magistrates for breaches of forest law during the year under report, and the one preceeding it, is given below :—

Name of Division.	Number of cases tried before Magistrates.		Number of convictions.	
	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	102	84	62	46
Naushahro	11	8	7	7
Hyderabad	11	10	7	8
Jerruck	6	3	2	2
Total...	130	105	78	63

The results compare favourably with those of last year as regards proportion of convictions to the number of cases tried, and the number of cases actually tried are also much fewer in the year under report than the preceeding one, but I cannot assign any special reason for this improvement.

27. A statement giving the number of petty offences compounded under Section 67 of the Indian Forest Act will be found below :—

Name of Division.	Illicit grazing.		Theft.		Other offences.		Compensation.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	498	514	127	73	17	7	Rs. 3,159	Rs. 2,659
Naushahro	32	103	20	24	...	10	82	149
Hyderabad	233	117	48	119	...	...	307	720
Jerruck	428	493	42	5	2	28	793	788
Total ...	1,191	1,227	237	221	19	45	4,341	4,316

The offences under the head of theft show a decrease, but those under illicit grazing and other offences, which consist chiefly of lopping by goat-herds, are more numerous, as compared with the figures of the former year. This is not so unsatisfactory as it would appear at first sight. The facilities for illicit grazing and lopping are great and the offences are not uncommon, the detection of a larger number of such offences points merely to greater vigilance on the part of Forest guards.

28. There were two cases of serious assault on Forest guards by cattle-breeders. In one a conviction was obtained, but in the other the Magistrate let the offenders off because there was a slight discrepancy in the statements of two of the witnesses for the prosecution, which appears to have justified him in giving the offenders the benefit of the doubt and holding that the Forest guards, who had been thrashed, had been over zealous in the discharge of their duty.

SECTION 3.—FIRES.

29. The number of fires is the same as in 1887-88, but the area burnt is more than double as large. Though this is the case the fires have not been so extensive or as destructive as they are in some years. The chief increase in the area burnt is in the Sukkur Division in Upper Sind, caused by incendiary fires lighted by cattle-breeders for the sake of new grass, and by the increase of fires into the forest, lighted outside forest limits, by cultivators.

30. Enquiries were made from the District Officers of the Revenue Department as to the extent they were able to give effect to the suggestion's made in Government of India's No. 110 F of 30th January 1889, but the answers elicited show that these officers were either unable to do very much, or did not understand the scope of their obligations in the matter. In the Naushahro and Hyderabad Divisions there is also an increase in the area burnt. In the former Division the most extensive forest fire was caused by the officials of the Khairpur State, who deliberately set fire to the jungle to clear the ground for the purpose of facilitating the settlement of a boundary dispute. The matter has been brought to the notice of the Political Agent. In the Hyderabad Division the fires were evidently incendiary for the sake of new grass. Owing to the low inundation of the previous year and want of rain the existing grass was coarse and dry. It was found necessary to close burnt areas to check these incendiary fires.

31. A statement of the number of fires and the area burnt is given below :—

Name of Division.	Number of Fires.		Area burnt.	
	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	58	61	1,843	3,946
Naushahro	12	8	1,178	2,078
Hyderabad	11	15	301	1,013
Jerruck	13	10	250	238
Total ...	94	94	3,572	7,275

32. The following is a statement of the area protected :—

Name of Division.	Area attempted to be protected.		Failures.		Area actually protected.	
	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.
Sukkur	458	93	6	106	451	627
Naushahro	60	484	3	158	57	326
Hyderabad	45	403	1	373	44	30
Jerruck	29	634	...	238	29	396
Total ...	594	834	11	235	583	99

The results cannot be compared with last year's figures, as I have eliminated from the "area protected" all such areas as are not in any real danger of suffering from forest fires, either by reason of the density and shade of large tree growth practically preventing the existence of grass and under wood, or owing to the land from the saline nature of the soil or other causes being unproductive of grass reeds or other herbage likely to be fired.

SECTION 4.—GRAZING.

33. The province had suffered again from a deficiency of rain and the river side forests in Central and Lower Sind that are within reach of the pastoral tribes in the hilly tracts on the west were resorted to in numbers exceeding even those of last year, and were, without doubt, the means of saving thousands of cattle that would otherwise have perished for want of fodder on the hills.

34. The chief grazing grounds are to be found in the "kachas" or newly formed alluvial lands in the river frontages of river side forests. These tracts not only afford abundant natural fodder for cattle, but such land before it has risen high enough by the yearly deposit of silt, during the inundation season, to be fit for the growth of trees of any value, is very suitable for the raising of fodder crops. The Forest Department permits crops of this kind to be raised on them, and this adds immensely to the comfort and prosperity of the pastoral population in the neighbourhood of the Government Reserves. Some Revenue officers view with great disfavour the possession of "kachas" by the Forest Department, and think it would be better to clear and devote them to cereal cultivation, if possible. There is not only a vast area of waste land in the province, far in excess of all possible requirements for agriculture, both in "kachas" and ordinary land, but it would be as stupid as it would be cruel to ignore the wants of the pastoral section of the population by not holding in reserve grazing grounds that are independent of rain, in a province that has such a scanty and precarious rainfall, and in which a drought may extend for a whole year.

35. A statement of the number of cattle permitted to graze free is given below :—

Buffaloes	926
Horned cattle	4,333
Horses and donkies	53

SECTION 5.—NATURAL REPRODUCTION.

36. In the river side forests of the Sukkur Division the compartments cleared in the fellings for locomotive fuel were closed to grazing, for reproduction, which is reported to be satisfactory from coppice shoots. The compartments that had been closed in previous years inspected by myself showed very good results; the areas of which the trees had been cleared being everywhere reclothed with fresh growth, but the inundation of the previous year had been a very low one, and there is much dry grass in the compartments under reproduction which is a source of great danger from forest fires, which yearly do very great damage and seriously retard the restocking of forest areas that have been worked out. In the Jacobabad districts and in Reserves lying within the protective embankment not capable of irrigation direct from the river, natural reproduction is slow and unsatisfactory, and this state of things must continue till the canal power of the district is increased and water can be made available for the irrigation of the Reserves. It is only in tracts where the land is sweet and good throughout that the roots of the trees, principally *kandi* (*prosopis specigera*) have reached low enough to make them independent of surface irrigation,

which has been cut off by the erection of the protective embankment. In patches where the roots in their downward course to find moisture have encountered deep belts of sand or saline soil, the trees have either died or exist merely as stunted bushes. When the trees *have* established themselves it is surprising to see with what vigour they continué to grow and coppice if cut down. A considerable proportion of the fellings this year for locomotive fuel have taken place on land that has been worked and cleared within the last eight or ten years, and on which the tree growth had re-appeared under simple but efficient protection, but without any artificial surface irrigation whatever.

37. In the Naushahro Division 1348 acres of cleared land was closed for natural reproduction. Out of this an area of 353 was given out for cerial cultivation for one season, with a view to assisting the coppice and fresh growth with the water brought on to the land for irrigating the crop, the cultivator undertaking to cut flush with the ground all gnarled and stunted bushes and to leave the land strongly fenced in after the removal of the grain crop. I inspected all the land so treated, and found that over about half the area where the cultivators had carried out their agreements honestly the results were highly satisfactory, but where the fences had been put up more for show than use, the fresh growth had been seriously injured or destroyed by goats and other animals that had found their way into the enclosures. The natural reproduction in areas closed in previous years was on the whole satisfactory, but many of the reserves in this Division suffer greatly for want of water, and it will be many years before funds can be made available for works necessary for their irrigation.

38. No fresh closures were made in the Hyderabad Division, as the annual fellings were taken in hand so late in the season that none of the compartments that were being worked were quite cleared and ready for closing before the end of the year. The reproduction in compartments previously closed was quite satisfactory. Natural reproduction in this Division is easy and certain, and the reserves may fairly be claimed to be maintained fully stocked either with mature or young growth.

39. Six hundred and forty-three small beams of babul timber were removed from Sekhat Forest. The age of the trees that gave them was known to be about 11 to 12 years. They were cut for thinning in compartments that were closed for reproduction in 1876-77.

40. Fellings for babul bark were made in compartments, the growth in which is that of less than twelve years. The results up to end of March 1889 are as follows :—

Area cleared	150 acres.
Number of selected trees left to grow into building timber per acre at an average	15 „
Total quantity of bark...	4,649 maunds.
Total quantity of firewood...	20,718 maunds.

41. In the Jerruck Division the fellings were also commenced very late and no fresh closures were made. Conditions are not so favourable to natural reproduction on the whole in this Division as they are in Hyderabad, owing to the fact that a large part of the forest area lies within protective embankments and its irrigation; though it is practicable by sluices and canals provided for the purpose, yet the quantity of water that can be let into the forests is limited owing to the danger of spill from the forests injuring cultivation beyond their limits, and this state of things cannot be remedied till funds can be found for the erection of certain embankments to prevent

the escape of water out of the forests. Where the forests are capable of being properly irrigated the success and rate of reproduction leaves nothing to be desired. A compartment was being worked for railway and other fuel this season that was closed in 1878 after having been entirely cleared.

SECTION 6.—ARTIFICIAL REPRODUCTION.

42. There is nothing in this province that can be fairly classed under this head, beyond the scattering of tree seed when required in closed compartments, and sowing it in land given out for cultivation for a season or more with a view to raising tree seedlings and encouraging coppice growth with the crop and closing the land when they are established. An area of 25 acres was treated under this plan in the Hyderabad Division and 268 acres in the Jerruck Division; one hundred and ninety maunds of babul and kandi seed was scattered in closed compartments that required it.

43. In the Sukkur Division two plots of 25 acres each were planted with cuttings of tali, *Dalburgia Sissu*, and tree tamarisk, but the results have not been good; much damage was done by frost. Two acres were added to the tali plantation in the Abad range near Sukkur, which has been such a success, as already reported in former reports. Other gardens and plantations were kept up, but there is nothing fresh of any interest to add concerning them.

SECTION 7.—EXPERIMENTS.

44. *Prosopis Glandulosa*, the seed of which was sent by Government for experiment in 1877-78, having giving results which tend to show that it would probably grow under natural conditions in the Sind forests, broadcast sowings of its seed raised in the plantations have been made from time to time in different parts of the Miani range, Hyderabad Division, but so far with no results. This year I ordered a quantity of seed to be sown on ploughed land that had been moderately flooded. The seed germinated freely, but it remains to be seen whether the seedlings will survive the next hot weather and inundation.

45. The spare land in the mangoe plantation in the Miani range, Hyderabad Division, was again given out for cultivation on the share arrangement with the following results :—

Area cultivated.....	10 acres.
Total yield.....	Rs: 974
Government share	,, 487

The crop of cotton partially failed over 4 acres for want of sufficient supply of water due to early fall of the river.

46. The bamboo plantation, of which mention has been made in former reports, has for some years been left unirrigated, except by such water as finds its way into it during very high floods. Its present condition proves that bamboos will not grow in Sind unless artificial irrigation is maintained, under these circumstances it could never pay to grow them.

SECTION 8.—COMMUNICATION AND BUILDINGS.

47. In the Sukkur Division a small building was erected in Shikarpur for the use of the men employed in the issue and collection of passes for

firewood at a cost of Rs. 140-15-2, and a small house costing Rs. 49-14-2 was put up for the use of the Range Forest Officer, Sadhuja range, to replace one that had been destroyed by a flood. Existing buildings were repaired as usual.

48. In the Naushahro Division a new house was built for Range Forest Officer, Sehwan, at a cost of Rs. 101-0-0. No new buildings were put up in any of the other Divisions. Ordinary repairs to existing buildings were carried out.

CHAPTER IV.

YIELD AND WORKING.

SECTION 1.—DEPARTMENTAL OPERATIONS.

49. The following statement shows the details of the working of Departmental Depôts :—

Name of Depôt.	Stock on hand on 1st April 1888.			Added during the year 1888-89.			Disposed of during the year 1888-89.			Balance on 31st March 1889.		
	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.
	C. ft.	No.	Mds.	C. ft.	No.	Mds.	C. ft.	No.	Mds.	C. ft.	No.	Mds.
Shikarpur	...	...	...	652	18,749	200	325	9,947	...	327	8,802	200
Sukkur	8,622	8,234	91	4,040	6,497	1,200	3,284	6,014	1,425	9,376	8,817	266
Rohri	956	4,920	...	1,297	14,376	...	1,977	18,449	...	876	847	...
Larkana	...	1,900	3,309	...	...	1,400	...	1,033	4,428	...	267	281
Sehwan	...	13,095	...	...	4,906	...	...	13,729	...	...	5,166	...
Tatta	229	1,640	...	...	...	...	8	1,640	...	221	...	...
Keti Bandar	...	...	156	7,843	...	2,531	7,510	...	812	333	...	1,875
Kotri	911	80	33,279	472	...	1,17,967	860	80	1,18,960	523	...	32,276
Hyderabad	5,931	44,739	40,053	3,224	1,91,176	48,836	6,107	1,73,566	87,246	3,061	52,349	1,645
Total...	16,653	75,508	76,890	17,528	2,25,693	1,72,124	19,971	2,25,058	2,12,471	14,209	76,148	36,543

50. The quantity of timber and fuel sold at each depôt is given below :—

Name of Depôt.	Timber, c. ft.		Posts and Rafters, number.		Fuel, maunds.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
Shikarpur	1,460	325	16,942	9,947	...	...
Sukkur	5,326	3,284	56,798	6,014	8,909	1,925
Rohri	823	1,877	10,723	18,449	...	...
Larkana	438	...	1,901	1,633	3,888	4,428
Sehwan	...	...	10,501	13,729	...	...
Karachi	1,743	...	...	...	...	...
Tatta	265	8	82	1,640	...	...
Keti Bandar	8,529	7,510	...	...	313	812
Kotri	3,243	860	28	80	1,25,637	1,18,960
Hyderabad	1,235	6,107	1,50,503	1,73,566	66,762	87,246
Total...	23,062	19,971	2,46,838	2,25,058	2,05,509	2,12,471